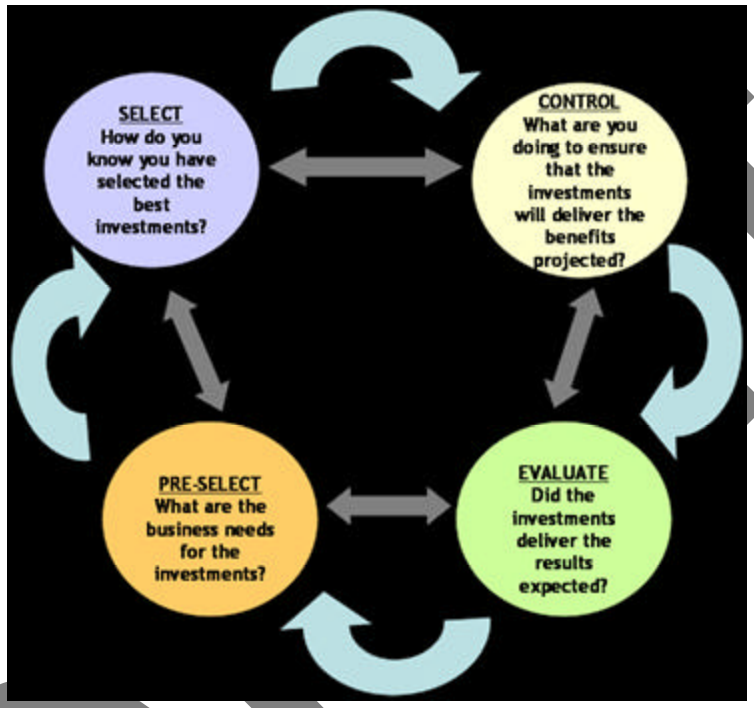
UNITED STATES DEPARTMENT OF THE TREASURY

INFORMATION TECHNOLOGY CAPITAL PLANNING AND INVESTMENT CONTROL POLICY GUIDE



OFFICE OF THE CHIEF INFORMATION OFFICER

VERSION 1

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Executive Summary

In 2006, the Department of the Treasury plans to invest approximately $2.7 billion in Information Technology (IT) assets and services. The success of these IT investments directly influences the ability of organizations within Treasury to execute business plans and fulfill missions.

Recognizing both the importance of IT investments to the organization and its role in supporting the success of these investments, Treasury's Office of the Chief Information Officer (OCIO) is engaged in an ongoing effort to establish, maintain, and support the IT investments analysis and decision-making environment. This environment consists of three key components: executive decision-makers, supporting tools, and a repeatable process. Each is summarized below:

- Executive decision makers – Consists primarily of an executive review board (E-Board) that oversees the process and which is a primary stakeholder in the success of the Department.
- Tools – Treasury uses a variety of tools to manage IT investments. The primary tool for IT portfolio and investment management is ProSight Portfolios. ProSight Portfolios is a web-based portfolio management tool that can be used to support both Treasury investment decision-making and OMB investment submissions. The OCIO maintains and supports ProSight Portfolios.
- Processes – Capital Planning and Investment Control (CPIC) is Treasury's primary process for making decisions about which IT initiatives and systems Treasury should invest in and creating and analyzing associated rationale for these investments.

As shown in Figure 1, the trend of Treasury's portfolio has been upward over the last 2 years. Moderating this growth and ensuring that sound investment decision making is done throughout the investment life cycle is key to continued support and management of these assets.

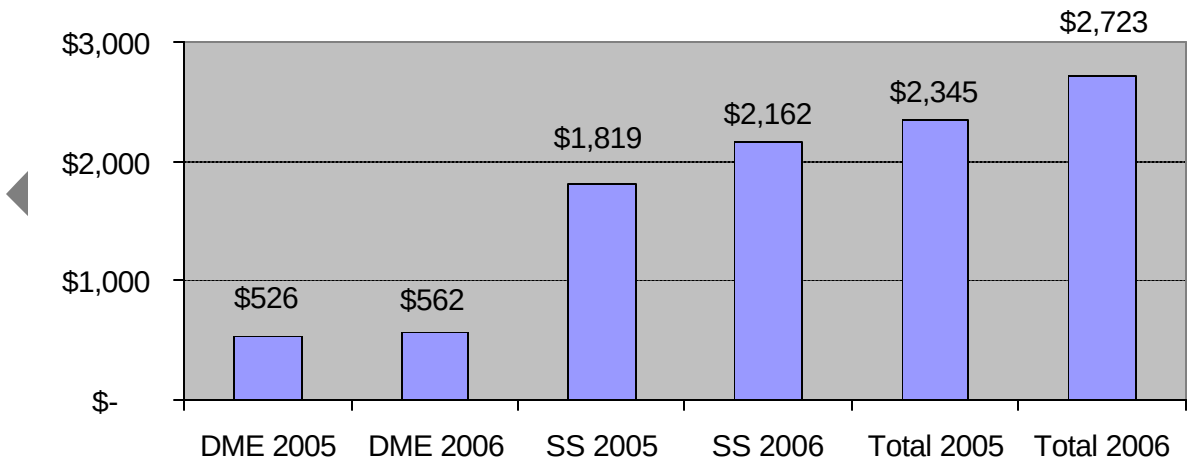

Figure 1: **Treasury IT Portfolio FY05 TO FY06**

Source : ProSight Portfolios (September 2004)

THIS GUIDE

The Treasury Information Technology (IT) Capital Planning and Investment Control (CPIC) Policy Guide identifies the processes and activities necessary to ensure that Treasury's IT investments are well thought out, cost effective, and support missions and business goals of the organization. It is based on guidance from both the Office of Management and Budget (OMB) and the Government Accountability Office (GAO) and incorporates "lessons learned" from Treasury's self scoring iterations over the last few months.

At the highest level, the CPIC process is a circular flow of Treasury's IT investments through the following four sequential phases:

- **Pre-Select Phase** – Executive decision-makers assess each proposed IT investment in terms of how it supports Treasury's mission and strategic objectives. Project Managers compile information necessary for supporting a proposal assessment.
- **Select Phase** – Investment analyses are conducted and the E-Board chooses those IT investments that best support the mission of the organization and Treasury's approach to enterprise architecture.
- **Control Phase** – Treasury ensures, through timely management oversight, quality control, and executive review, that IT initiatives are developed and executed in a disciplined, well-managed, and consistent manner.
- **Evaluate Phase** – Actual results of the selected IT investments are compared to expectations to assess investment performance. This is done to assess the project's impact on mission performance and to identify any necessary project changes or modifications.

All four phases are structured in a similar manner using a set of common elements. These common elements provide a consistent and predictable flow and coordination of activities within each phase. Beyond the detailed CPIC process and activity description, this Guide also includes:

- A sample CPIC calendar depicting when each of the 4 CPIC phases occur during a typical fiscal year cycle – see Appendix A - CPIC Calendar
- A link [to be provided at a later date] to the E-Board charter and the associated operating procedures necessary to conduct investment reviews.
- A link to the TIRB charter and the associated operating procedures necessary to conduct investment reviews [located at http://www.treas.gov/offices/cio/capital-planning/].
- A link to Treasury's mission, strategic goals and objectives, as well as bureau-specific strategic goals [located at http://www.treas.gov/offices/management/budget/planningdocs/treasury-strategic-plan.pdf].
- Overview of Treasury's Information System Life Cycle (ISLC) Directive and a link to the companion ISLC Manual – see

- Appendix B – Treasury Information System Life Cycle
- Guidance on Treasury's Enterprise Architecture which will provide a common framework for defining the existing and target IT environment while ensuring alignment with strategic goals – see Appendix C – Enterprise Architecture Guidelines
- Guidance on Treasury's IT Security Program and policies – see Appendix D – Treasury IT Security Policy
- Guidance on how to:
    - Prepare a business case – see Appendix E – Exhibit 300 Business Case Guide
    - Assess and Document Project Manager (PM) Qualifications -- See Appendix F - Guidance on Project Manager Qualifications
    - Complete a Cost-Benefit Analysis (CBA) – Under Development
    - Conduct a risk assessment for IT capital planning – Under Development
    - Develop performance measures for IT projects – see Appendix G - Performance Measurement
    - Manage IT projects – see Appendix H – Project Management
    - Conduct earned value analyses – see Appendix I – Earned Value Management
    - Calculate Net Present Value – see Appendix J – Net Present Value Calculation Method
    - Conduct a Post-Implementation Review (PIR) – Under Development
- The scoring criteria used by Treasury's Office of the Chief Information Officer (OCIO) and the E-Board during investment reviews and related matrices used for this development – see Appendix K - Treasury Scoring Methodology
- A glossary of terms and acronyms used throughout this document – see Appendix L – Glossary of Terms and Acronyms
- A list of references used to create this document – see Appendix M - References

Chapter 1 - Introduction

PURPOSE

This Guide outlines the Department of the Treasury's Information Technology (IT) Capital Planning and Investment Control (CPIC) process as envisioned in the Clinger-Cohen Act of 1996, the Office of Management and Budget's (OMB) Circular A-130 (Management of Federal Information Resources) and other related guidance and regulations.

The goal of this Guide is to establish and maintain long-range strategic planning and a disciplined budget process as the basis for efficient management of Treasury's IT portfolio. The processes are designed to promote informed decision making with timely oversight and executive review. This will enhance the ability of the Treasury to achieve bureau missions and performance goals with the lowest life-cycle costs and the least risk.

This Guide describes which activities occur during the Pre-Select, Select, Control, and Evaluate Phases, the individual(s) responsible for performing these activities, when the activities are initiated, when they need to be completed, procedures to be followed and expected results. It will be updated on a periodic basis to reflect "lessons learned" and changes in the legislative and OMB guidelines.

LEGISLATIVE BACKGROUND AND ASSOCIATED GUIDANCE

Several statutes focus on improving the mission efficiency and effectiveness of federal agencies by streamlining their operational and management practices. These laws include:

- The Chief Financial Officer (CFO) Act of 1990
- The Government Performance and Results Act of 1993 (GPRA)
- The Federal Acquisition Streamlining Act of 1994 (FASA)
- The Paperwork Reduction Act of 1995 (PRA)
- The Clinger-Cohen Act of 1996 (CCA)
- The Government Paperwork Elimination Act of 1998 (GPEA)
- The Federal Information Security Management Act (FISMA)
- The E-Government Act of 2002 (P.L. 107-347)

This Guide is based on the IT aspects of these laws and focuses specifically on the CCA requirements, which requires a structured CPIC process to systemically maximize the benefits of IT investments. The CCA specifically states:

- "The Head of each executive agency shall design and implement in the executive agency a process for maximizing the value and assessing and managing the risk of the information technology acquisitions of the executive agency."
- "The process shall:
    1. Provide for the selection of information technology investments to be made by the executive agency, the management of such investments, and the evaluation of the results of such investments;
    2. Be integrated with the processes for making budget, financial, and program management decisions within the executive agency;
    3. Include minimum criteria to be applied in considering whether to undertake a particular investment in information systems, criteria related to the quantitatively expressed projected net risk adjusted return on investment and specific quantitative and qualitative criteria for comparing and prioritizing alternative information systems investment projects;

4. Provide for identifying information systems investments that would result in shared benefits or costs for other Federal agencies of State or local governments;
5. Require identification of quantifiable measurements for determining the net benefits and risks of a proposed investment; and,
6. Provide the means for senior management to obtain timely information regarding the progress of an investment, including a system of milestones for measuring progress, on an independently verifiable basis, in terms of cost, capability of the system to meet specified requirements, timeliness, and quality."

GOVERNANCE PROCESS

IT governance provides the framework for decision-making and accountability required to ensure IT investments meet the strategic and business objectives of the Department in an efficient and effective manner. Two Department-level review boards have been established to provide executive oversight to Treasury's IT investment planning and management and ensure compliance with the guidance from Congress, OMB, and the General Accountability Office (GAO):

1. Treasury Executive Investment Review Board (E-Board)
2. Technical Investment Review Board (TIRB)

Figure 2 illustrates the framework by which the Governance bodies function and manage IT investments at the Treasury.

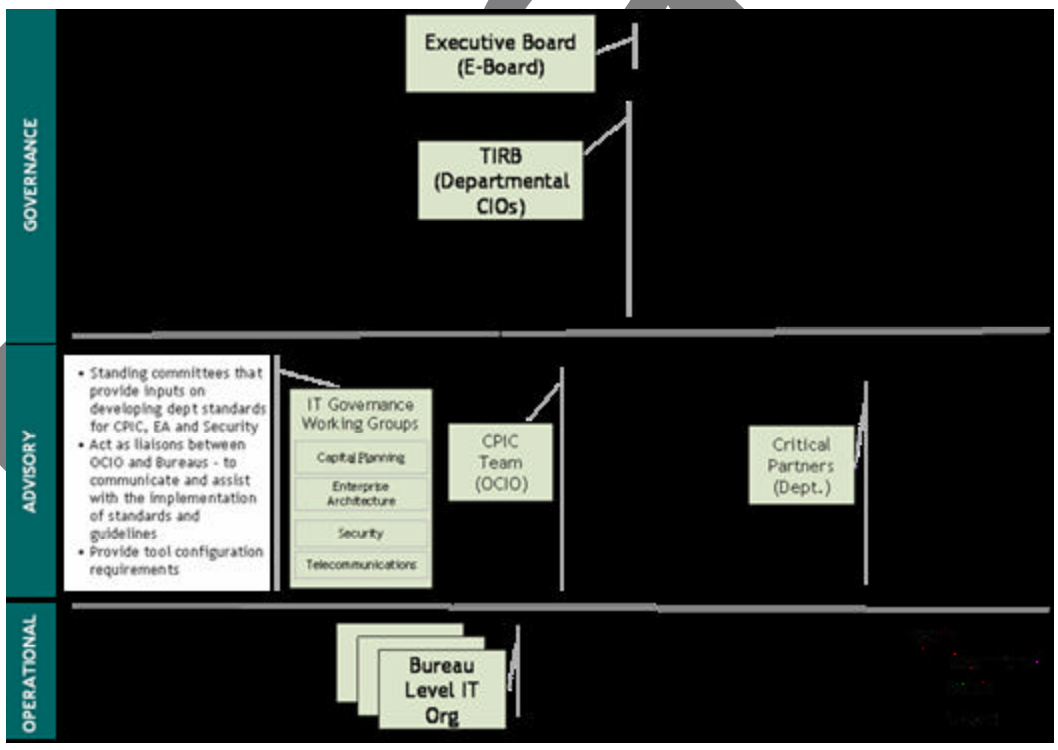

Figure 2: Governance Framework

SCOPE

It is expected that each individual Treasury bureau will have a CPIC process to manage its own IT portfolio. The Treasury Office of the Chief Information Officer (OCIO) will only review investments that

have been selected by the bureaus through their respective CPIC processes. Bureaus are expected to have pre-select and select processes at the bureau-level where funding requests will be examined, evaluated and selected through an objective process before submitting IT investment requests through the OCIO to the TIRB and ultimately to the E-Board. The bureaus must also have processes in place for managing the acquisition phase of funded investments and providing timely reporting for the TIRB and E-Board Control reviews. Bureaus are encouraged to conduct periodic portfolio evaluations and develop processes to support the TIRB and E-Board reviews.

All IT investments within the Treasury must comply with this CPIC guidance. The processes as laid out in this Guide represent the overarching framework with which all bureau processes must comply and integrate. Bureau processes must support the overall Treasury process and cannot be contradictory to this Guide.

The CPIC process will include Pre-Select, Select, Control, Evaluate activities, E-Government Strategy reviews and assistance with "Performance Assessment Rating Tool" (PART) reviews for IT investments.

The E-Board and TIRB reviews will be focused on IT investments that are considered to be "major" and strategic investments for the Treasury. The TIRB and E-Board may also choose to periodically conduct portfolio level reviews of the Non-Major IT investments. In addition, the OCIO CPIC Team or the TIRB may conduct random audits of selected investments in the Non-Major IT portfolio.

The thresholds for an investment to be considered "major" are described in the following section.

GOVERNANCE AND INVESTMENT PRINCIPLES

In developing Treasury's new vision for Capital Planning and Investment Control, the following metrics will be used to measure the overall health and status of Treasury's business cases, and assist in our decision-making and governance of Treasury's IT investment portfolio:

1. The 10 Investment Principles (see
2.
3. Table 1: Investment Principles).

4. Benchmarks for key measurement areas, including:

    a. Enterprise Architecture
    b. Budget Growth
    c. Portfolio Risk
    d. Portfolio Value
    e. Cost and Schedule Health
    f. Strategic Alignment

Applying these metrics to each major IT investment will result in well-developed business cases being placed on a "Model E-300 List" and poorly performing investments placed on a "Watch List." Investments on the Watch List will require corrective action plans.

Table 1 describes each of the Investment Principles in detail. More importantly, it lists a series of key questions that need to be asked in order to address each Principle.

Table 1: Investment Principles

Investment Principle	Description/Key Questions

1. Ensure that project clearly supports bureau and department strategic objectives.	• Does the project align to one of Treasury's critical Key Business Objectives (KBO) and strategic goals? • Is the portfolio of Treasury investments more heavily aligned to one KBO? • Does Treasury need to maintain or modify this distribution?
2. Ensure IT assets are secure and comply with FISMA requirements.	• Is the level of investment IT security for each investment and for the portfolio appropriate given the assessment of security health and compliance? • What is the increase in IT Security spending? Can this increase be justified? Has the investment been through Certification & Accreditation (C&A)? What is date of last C&A? Does it have a recent Security Plan? • Was it on the OMB "Watch List" last year?
3. Consolidate duplicative initiatives under a lead investment for a line of business.	• Are there duplicative systems that support the same sub functions? • What percentage of systems have overlapping functions? • Does Treasury need to maintain or modify this distribution?
4. Evaluate the level of growth in steady-state investments.	• Given Treasury's strategic objectives, what is the appropriate % investment in the steady state portfolio? • What is the required level of growth in the steady state portfolio to achieve this distribution?
5. Moderate the level of growth in development IT investments.	• Given Treasury's strategic objectives, what is the appropriate % investment in the Development portfolio? • What is the required level of growth in the Development portfolio to achieve this distribution?
6. Ensure that project risk levels are managed, and alternatives are considered for high risk projects.	• Are all 19 OMB mandatory risk areas addressed? • Do all identified risks have current mitigation plans? • Do these investments have viable alternatives?
7. Ensure that IT investments are returning value to the taxpayer and the government.	• Are the Return on Investment (ROI) and benefits calculations complete and supportable? • Is the ROI negative or positive? What is the NPV for the project? • Does the project provide a mission-critical function or one that is mandated by legislation?
8. Ensure that current investments are meeting cost, schedule and performance goals.	• Is the cost or schedule variance over or under budget by more than 10%? • How does the cost estimate from the project compare to the summary of spending requested in the budget? • Has the project been re-baselined in the past two years? • Have assets in the planning or acquisition stages completed a full EVM analysis? Have assets in the steady state and mixed life stages completed an operational review?
9. Validate that investments' Project Managers have requisite skills to manage projects.	• What % of investments comply with OMB's PM capabilities requirements? • For those projects that do not comply, are the risks high? Are cost and schedule variances within the acceptable range? Does this comply with FISMA requirements?
10. Drive infrastructure purchases through enterprise agreements.	• What enterprise agreements exist for large, shared infrastructure investments? Shared services? • What % of the Treasury portfolio is using these agreements? For those that are not, has the appropriate justification/decision been presented to the TIRB?

THRESHOLDS FOR MAJOR IT INVESTMENTS

Major IT investments are those that meet at least one of the following criteria:

- OMB-Specific Criteria:
  - Requires special management attention because of its importance to a bureau's mission;
  - Was a major investment in the previous submission and is continuing;
  - Is for financial management and spends more than $500,000;

- Directly tied to the top two layers of the Federal Enterprise Architecture (Services to Citizens and Mode of Delivery);
- Integral part of the bureau's modernization blueprint (enterprise architecture);
- Has significant program or policy implications;
- Has high executive visibility;
- Is defined as "major" by the agency's capital planning and investment control process; and,
- Is E-government in nature or uses e-business technologies, regardless of the cost.

• Treasury-Specific Criteria:
  - Total life-cycle costs exceed $50 million;
  - Has an annual appropriation of $5 million or higher; and,
  - Impacts more than one bureau.

Projects that do not meet at least 1 of these criteria are considered "Non-Major" investments. Figure 3: Treasury Portfolio, Major vs. Non-Major Breakdown depicts the total budget year 2006 expense distribution between Major and Non-Major IT investments.

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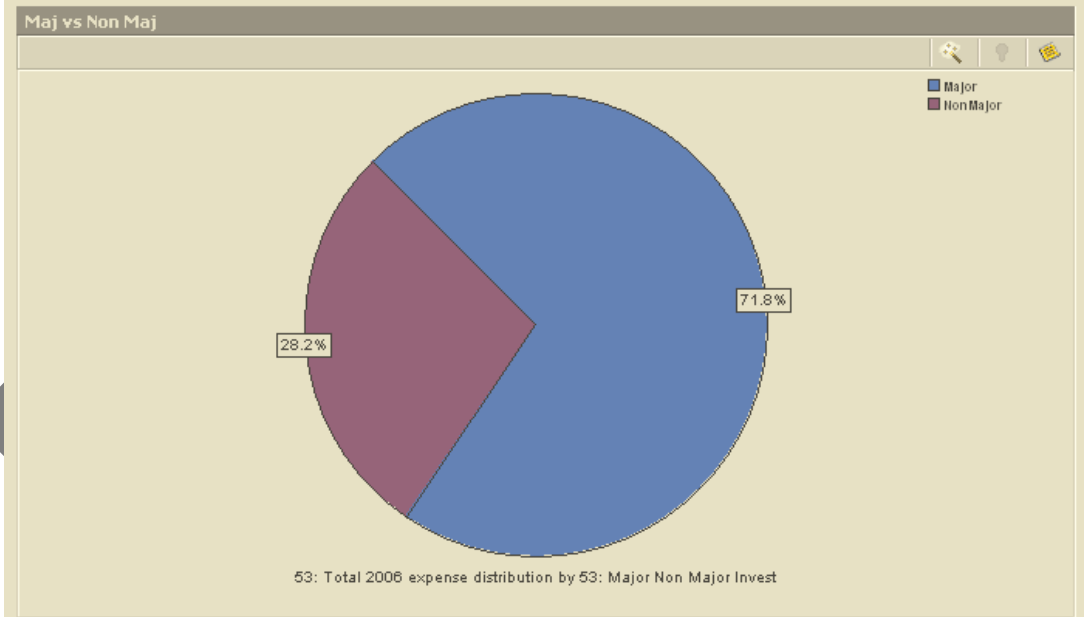


Figure 3: Treasury Portfolio, Major vs. Non-Major Breakdown

ROLES AND RESPONSIBILITIES

The following decision-making bodies and personnel have been assigned the responsibilities described below.

- **E-Board** – The Treasury Executive Investment Review Board (a.k.a. "E-Board") is the governing and approval body responsible for ensuring that proposed investments (both IT and non-IT) meet

Treasury strategic, business, and technical objectives. It is responsible for reviewing and approving strategic IT and non-IT investments at Treasury. The E-Board is chaired by Treasury's Deputy Secretary, co-vice-chaired by the Treasury Chief Information Officer (CIO) and the Assistant Secretary for Management (ASM), and staffed by the bureau heads.

- **TIRB** – The Technical Investment Review Board (TIRB) recommends policy for CPIC, shared infrastructure, Enterprise Architecture and security. It is responsible for evaluating potential and existing major IT investments for adherence to Treasury and OMB capital planning criteria, and for technical feasibility. It also assesses alignment of investments with Treasury Architecture and procurement standards. The TIRB makes recommendations on technical and funding matters to the E-Board. It also conducts periodic reviews of the IT investment portfolio. The TIRB is chaired by the Treasury CIO and staffed by the Treasury Deputy CIO and all bureau CIOs. [The TIRB Charter is located at http://www.treas.gov/offices/cio/capital-planning/.]

- **Treasury CPIC Team** - The Treasury CPIC Team is comprised of Treasury Office of the Chief Information Officer (OCIO) personnel and is responsible for investment management oversight of the CPIC process. The CPIC Team develops bureau level IT portfolio expertise and provides input and recommendations to the bureaus, Treasury's CIO and the TIRB. Each member of the Team is focused on one or more bureaus. The CPIC Team is also responsible for scoring Exhibit 300s, and coordinating information sharing with the Departmental budget offices and other Critical Partners.

- **Critical Partners** – Critical Partners support the CPIC Team by providing subject matter expertise on topics such as security, acquisition strategy, technical feasibility, enterprise architecture (EA), business case scoring, and budgeting.

- **IT Governance Working Groups** – These standing committees provide input on developing Treasury-wide standards for CPIC, EA and security and act as liaisons between OCIO and the bureaus, to communicate and assist with the implementation of standards and guidelines. They also play an active role in providing tool configuration requirements.

- **Bureau Heads** - Responsible for signing CPIC documentation before submission to OCIO as well as serving on the E-Board.

- **Bureau Sponsor** - Responsible for providing executive sponsorship of the investment and should be a senior level executive within the applicable mission area or bureau.

- **Project Sponsor/Functional Manager** - Responsible for the strategic business processes under development or enhancement and for ensuring their integrity; also serves as the primary user interface to the TIRB and the E-Board. The Project Sponsor will normally be the same person as the Functional Manager but if the investment is cross-cutting, strategic, or high visibility, the Project Sponsor may be different from the Functional Manager.

- **Project Manager** - Responsible for successful management and completion of one or more IT investments. The project manager will also be responsible for tracking the project plan against the baselines and providing updated cost, schedule and performance information required to support the Control process.

- **IT Manager** - Responsible for serving as the primary point of contact for technology issues.

- **Contracting Analyst** – The Contracting Analyst serves as the primary acquisition support to the investment's Project Manager and shares information with the Department's Office of Performance Budgeting.

PROCESS OVERVIEW

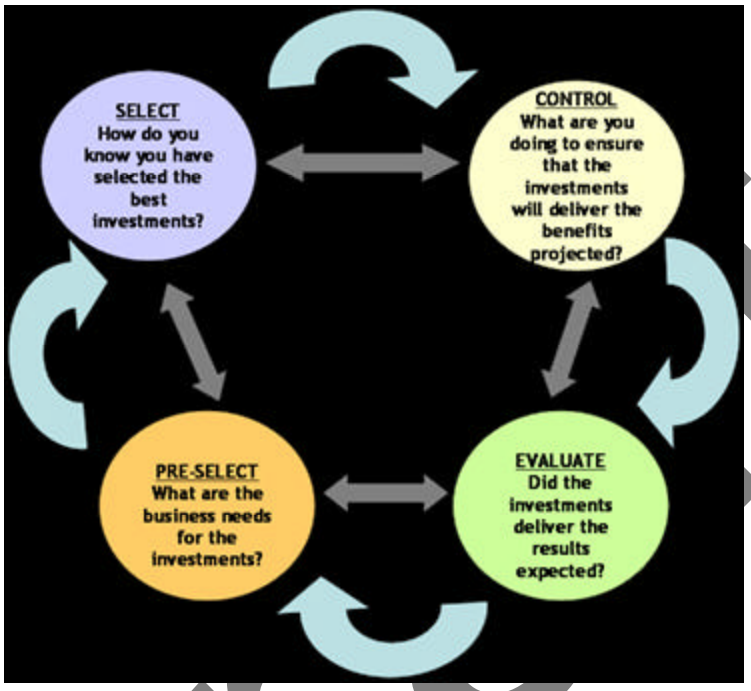


Figure 4: Process Overview

The CPIC process is a fluid and dynamic process in which proposed and on-going investments are continually monitored throughout their life cycles. [See Treasury Directive, TD 84-01, "Information System Life Cycle (ISLC)" for further information about Treasury's policy regarding the use of an ISLC located at http://www.treas.gov/regs/td84-01.htm.] Successful investments and those that are terminated or delayed are evaluated both to assess the impact on future proposals and to benefit from any lessons learned. The CPIC process consists of four phases -- Pre-Select, Select, Control and Evaluate. As detailed in this Guide, each phase contains the following common elements:

- **Purpose** - Describes the objective of the phase;
- **Scope** – Describes the type of investments and decisions on which the phase is focused;
- **Entry Criteria** - Describes the phase requirements and thresholds for entering the phase;
- **Process** - Describes the type of justification, planning, and review that will occur in the phase; and,
- **Exit Criteria** - Describes the actions necessary for proceeding to the next phase.

Completing one phase is necessary before beginning a subsequent phase. Each phase is overseen by the E-Board, which ultimately approves or rejects an IT investment's advancement to the next phase. This ensures that each investment receives the appropriate level of managerial review and that coordination and accountability exist. Exceptions to CPIC requirements must be identified in the IT investment project plan.

Treasury bureaus and staff offices that have IT investment proposals meeting the "major" IT investment criteria should prepare an investment proposal according to the guidelines provided in this document. The proposal's length and level of detail should be commensurate with the system's size or impact. These proposals will enter the CPIC process. They will be analyzed by the TIRB for quality and conformance to policies and guidelines, and reviewed against the applicable strategic investment criteria. The TIRB prepares a brief investment summary, an investment analysis and a recommendation that is sent to the E-Board for review and approval/disapproval action. Approval, if granted, is an approval of concept, indicating that the bureau or staff office has done the preparatory work necessary to fully justify the investment, and has the mechanisms in place to manage the investment through acquisition, development, implementation, and operation. The investment must still compete for funding through the budget process.

PROCESS COORDINATION

Approved investments must move through the CPIC processes to obtain investment funding. The bureau is responsible for preparation of the budget and/or Working Capital Fund requests for its IT investment submissions.

CPIC CONTACT INFORMATION

The Capital Planning and Investment Control (CPIC) process is primarily supported and maintained by Treasury's Office of the Chief Information Officer (OCIO). For further information about this Guide or the CPIC process, please see Treasury's CPIC Web site at http://www.treas.gov/offices/management/cio/capitalplanning or contact the OCIO CPIC Director via e-mail at ocio-cpic@do.treas.gov. Additional CPIC Team and Bureau CPIC Coordinator contact information is provided in Appendix N - CPIC Team and Bureau CPIC Coordinators.

Chapter 2 – Pre-Select Phase

PURPOSE

The Pre-Select Phase is the process by which investments are short-listed for inclusion in the budget request for the upcoming budget year. This phase provides a process to assess a current investment's support of bureau strategic and mission needs and conduct an initial review of the investment. It is during this phase that the business/mission need is identified and relationships to the Treasury and/or bureau strategic planning efforts are established. The Pre-Select Phase provides an opportunity to focus efforts and further the development of the initiative's concept. It also allows project teams to begin the process of defining business requirements, estimating costs, identifying potential benefits, and generating a "business case lite" in preparation for inclusion in the Treasury's investment portfolio.

This section will provide guidelines on the how Bureaus should implement Pre-Select processes at a bureau level and the threshold of data quality and completeness that should be met before an investment is promoted for Treasury review.

The Governance and 10 Investment Principles serve as the foundation on which these processes are built. Governance defines who makes the investment decisions and how input is provided at various levels. The Investment Principles provide the criteria and metrics to make investment decisions.

SCOPE

The Pre-Select process applies to new programs/investments seeking funding in the upcoming budget year and includes both Major and Non-Major IT investments. All Major IT investments are required to follow the Pre-Select process as defined in this Guide. While the burden of reporting for Non-Major systems will be lower, these investments are also expected to follow the processes defined in this Guide. The TIRB and E-Board may choose to conduct portfolio reviews of the Non-Majors or review a random sample of the Non-Majors.

ENTRY CRITERIA – Under Development

PROCESS – Under Development

EXIT CRITERIA

All Major investments, prior to exiting the Pre-Select Phase, must obtain E-Board approval for the mission need and concept.

All Non-Major IT investments should complete the Exhibit 300 (Non-Major Project) form in ProSight, prior to exiting the Pre-Select phase.

Chapter 3 - Select Phase

PURPOSE

Select is the process by which IT investments are annually screened, scored and selected. In the Select Phase, Treasury ensures the IT investments that best support Treasury's mission and approach to enterprise architecture, are chosen and prepared for success (i.e., have a good project manager, are analyzing risks, etc.). The process aims at providing a selection of technically and financially sound investments that are best aligned with the President's Management Agenda (PMA) and Treasury and bureau business priorities. The process also aims at balancing Treasury's IT portfolio by addressing risk, redundancy/duplication and alignment issues.

Select provides a framework through which investments can be selected in an objective and consistent manner and reviewed at the appropriate level of authority. Individual investments are evaluated in terms of technical alignment with other IT systems and projected performance as measured by Cost, Schedule, Benefit, and Risk (CSBR). Milestones and review schedules are also established for each investment during the Select Phase. In this phase, Treasury prioritizes each investment and decides which investments will be included in the portfolio. Investment submissions are assessed against a uniform set of evaluation criteria and thresholds. The investment's CSBR are then systematically scored using objective criteria and the investment is ranked and compared to other investments. Finally, the E-Board selects which investments will be included in Treasury's portfolio.

This section will provide guidelines on the how Treasury bureaus should implement Select processes at the bureau level and the threshold of data quality and completeness that should be met before an investment is promoted for Treasury review.

The Governance and Investment Principles serve as the foundation on which these processes are built. The Governance defines who makes the investment decisions and how input is provided at various levels. The Investment Principles provide the criteria and metrics to make investment decisions.

SCOPE

The Select process applies to new and existing programs/investments seeking funding in the upcoming budget year.

The Select process includes both Major and Non-Major IT investments. All Major IT investments are required to follow the Select process as defined in this Guide. While the burden of reporting for Non-Major IT systems will be lower, these investments are expected to follow the guidelines defined in this Guide as well. The TIRB and E-Board may choose to conduct portfolio reviews of the Non-Majors or review a random sample of the Non-Majors.

PORTFOLIO MANAGEMENT

To support Treasury's portfolio management efforts, assessors should consider new IT investments in the context of the entire portfolio. An acceptable ratio of high, medium, and low risk investments should be included in the portfolio to achieve organizational objectives and future needs. The balance between the various risks of the technical, operational, financial and organizational components is part of portfolio selection.

The E-Board will consider the ratio in different categories of investments based on their functionality. Additionally, the E-Board will take a strategic view while developing recommendations. This view should:

- Use a broad understanding of the environment and Treasury's need in identifying which investments produce the maximum results per the Clinger-Cohen Act.
- Consider public and Congressional interest in IT investment decisions.
- Determine which investments are of particular interest to the Treasury through its strategic goals and policies, the Administration and Congress.

- Consider Enterprise Architecture and e-Government when analyzing Treasury portfolios.
- Consider the results of not selecting the investment.
- Evaluate mandatory investments in terms of the overall pool and whether the investment must be made now or in the future.
- Consider whether the investment meets minimum legal requirements or goes beyond legal mandates, leading to unnecessary costs.

ENTRY CRITERIA – Under Development

PROCESS – Under Development

EXIT CRITERIA – Under Development

Chapter 4 - Control Phase

PURPOSE

The objective of the Control Phase is to ensure, through timely oversight, quality control, and executive review, that IT investments are conducted in a disciplined, well-managed, and consistent manner. Investments should be closely tracked against the various components identified in the risk assessment and mitigation plan developed in the Select Phase. This phase also promotes the delivery of quality products and results in investments that are completed within scope, on time, and within budget. During this process, senior managers regularly monitor the progress/performance of ongoing IT investments against projected cost, schedule, performance, and delivered benefits.

Although Treasury usually selects new investments annually, the Control Phase is an on-going activity. It requires the continuous monitoring of ongoing IT initiatives through the development or acquisition life cycle. Treasury will have periodic reviews and reviews as key milestones are completed based on the review schedule completed during the Select Phase.

The Control Phase is characterized by decisions to continue, modify, or terminate a program. Decisions are based on reviews at key milestones during the program's development life cycle. The focus of these reviews changes and expands as the investments move from initial concept or design and pilot through full implementation and as projected investment costs and benefits change.

The reviews focus on ensuring that projected benefits are being realized, cost, schedule and performance goals are being met, risks are minimized and managed, and the investment continues to meet strategic needs. Depending on the review's outcome, decisions may be made to suspend funding or make future funding releases conditional on corrective actions.

SCOPE

The Control process applies to all IT investments and includes both Major and Non-Major IT investments. All Major IT investments are required to follow the detailed Control process as defined in this Guide.

Non-Major IT investment managers will be required to complete a less intensive self-assessment of the investment. The TIRB and E-Board may choose to conduct portfolio reviews of the Non-Majors or review a random sample of the Non-Majors.

PORTFOLIO MANAGEMENT

In addition to evaluating the individual IT investments, the TIRB and E-Boards will also conduct reviews of the Treasury portfolio to evaluate the alignment, health and risk of the portfolio as the selected investments move through the acquisition cycle.

ENTRY CRITERIA

Prior to entering the Control Phase, investments must have:

- Conducted an assessment against performance goals and developed quantifiable performance measures
- Updated the project plan which details quantifiable objectives, including an acquisition schedule, investment deliverables, and projected and actual costs
- Updated costs, schedule, benefits, and risks based on actuals
- Conducted an assessment of security, Section 508 (IT accessibility), enterprise architecture goals and measures
- Established an E-Board investment review schedule for the Control Phase
- Obtained E-Board approval to enter the Control Phase.

Once the investment enters the Control Phase, the Project Manager will monitor the investment throughout development and report status to the sponsors and oversight groups.

PROCESS

1.1.1 Major IT Investments

During the Control Phase, an IT investment progresses from requirements definition to implementation. Throughout this phase, the OCIO works with the bureaus to gather data and conduct investment reviews to assist in monitoring all investments in the IT portfolio. Investment reviews provide an opportunity for Project Managers to raise issues concerning the IT developmental process, including security, enterprise architecture alignment, e-Government, GPEA compliance and Section 508 concerns.

The ability to adequately monitor IT initiatives relies heavily on the outputs from effective investment execution and management activities. The OCIO CPIC Team maintains a control review schedule for all initiatives in the Treasury's IT investment portfolio and monitors investments quarterly.

The TIRB conducts quarterly reviews of all major investments each quarter and recommends corrective actions as appropriate. The E-Board reviews investments at its discretion or if the cost, schedule, or performance varies more than ten percent from expectations. The E-Board reviews are based on factors including the strategic alignment, criticality, scope, cost, and risk associated with all initiatives. The Project Sponsor establishes milestones as part of the investment baseline against which performance will be measured throughout the Control Phase. Bureaus are expected to uphold these milestones; OMB will hold agencies responsible for meeting milestones as originally indicated in the baseline.

After establishing the milestones, the Project Sponsor revises the project plan as required to meet the approved milestones. It is recommended that the project plan include a system pilot during the Control Phase because piloting helps reduce risk and provides a better understanding of costs and benefits.

The cost, schedule and performance data is submitted to OMB through the OCIO after the E-Board reviews.

Table 2 provides a summary of the Control Phase process, as well as the individual(s) and/or group(s) responsible for completing each step, as detailed in the following table.

Table 2: Control Process Flow

#	Process Step	Responsible Individual(s) or Group(s)
1	Track cost, schedule, performance, risk and security status	Project Sponsor Project Manager
2	Assess initiative progress against Performance Measures	Bureau Sponsor Project Sponsor Project Manager
3	Prepare quarterly investment review submission	Project Manager
4	Review and approve investment submission	Bureau Sponsor
5	Data analysis and preparation for Control reviews	CPIC Team
6	Review investment and recommend appropriate action	TIRB
7	Review exceptions and make accelerate, modify, suspend or terminate decisions	E-Board

#	Process Step	Responsible Individual(s) or Group(s)
8	Work with Project Sponsor to implement E-Board recommendations	OCIO Project Sponsor

1. Track Costs, Schedule, Performance, Risk and Security Status.

The Project Sponsor analyzes costs, schedule, performance, risk and security status against the project management plan established in the Select phase. The Project Manager collects actual information on the resources allocated and expended throughout the Control Phase. The Project Manager works with the Project Sponsor to ensure that the investment still aligns with the Bureau mission, strategic planning, enterprise architecture and e-Government planning. The Project Sponsor compares the actual information collected to the estimated baselines developed during the Select Phase and identifies root causes for any differences. The Project Sponsor reviews the security analyses for accuracy and updates cost information based on actual acquisitions or additional items included since the Select Phase (see Appendix D – Treasury IT Security Policy). The Project Sponsor also maintains a record of any changes to the initiative's technical components, including hardware, software, security, and communications equipment. Technical component changes may trigger a new architecture review.

The Project Sponsor coordinates with the Project Manager to identify any new or existing internal risks based upon review of the Work Breakdown Structure (WBS), project plan, risk checklist, and stakeholder interviews. Financial, technical, operational, schedule, legal, contractual, and organizational risks should be identified and monitored. The Project Sponsor provides periodic updates to the OCIO on the investment's status and security costs, schedule, and technical baselines. The Project Sponsor ensures that the investment has been planned realistically.

Key personnel and Subject Matter Experts (SMEs) for functional areas should be identified and labor costs quantified. The Project Sponsor develops a project plan including project metrics, a Work Breakdown Structure (WBS), and a schedule with firm milestones.

2. Assess Initiative Progress Against Performance Measures

As part of the periodic milestone reviews during the Control Phase, the Project Sponsor and Project Manager determine whether the project team is managing investment cost and schedule variance, mitigating future variances, and providing expectation of future performance based upon work accomplished to date. The primary purpose of this assessment is to ensure the initiative is on schedule and to help identify issues or deficiencies that require corrective action. In some instances, where the business case may no longer exist or be as strong, or if significant changes to the cost, schedule, and technical baselines are required, it may also be necessary to re-score the initiative.

To begin the control screening stage, the Project Sponsor updates the data on earned value management (EVM) and operational analysis, planning, issues, risk, security certification and accreditation (C&A), PM qualification and initiative performance in ProSight (via the Control Form). In accordance with the guidelines in Circular A-11, the Project Manager completes the EVM analysis for investments in Development, Modernization, and Enhancement (DME) or an operational analysis for steady state investments. For investments in the Mixed-Life cycle stage, the Project Manager completes the EVM analysis on the acquisition components of the investment and an operational analysis on the steady state components.

The ProSight Control Form is geared towards collecting data that will help evaluate if the initiative has met expectations, if it will support the decision to continue with the investment, and identify any deficiencies and corrective actions needed. Updated investment information is submitted to the OCIO each quarter to facilitate the TIRB and E-Board reviews.

3. Prepare Quarterly Investment Review Submission

Each investment in the Control Phase will be evaluated on the elements listed below:

- Continued alignment to the President's Management Agenda (PMA), Treasury and Bureau priorities
- Earned Value Management (EVM) metrics
- Security Certification and Accreditation -- A designated OCIO senior cyber security representative shall review the E-300 to ensure IT security questions are adequately addressed for each major IT investment.
- Risk
- Updated Cost Benefits Analysis (CBA)
- Project Manager qualifications and use of good project management methodology – see Appendix F - Guidance on Project Manager Qualifications and Appendix H – Project Management
- Enterprise Architecture alignment – see Appendix C – Enterprise Architecture Guidelines

4. Review/Approve Investment Submission

The Bureau Head reviews the investment submission and requests the Project Sponsor, Functional Manager, and/or Bureau Sponsor update the package or make changes as needed. The Bureau Head then approves the investment submission and forwards it to the OCIO.

5. Analyze Data and Prepare for Control Reviews

The OCIO CPIC Team assesses the investment's progress using a methodology similar to the procedures used during the Select Phase and provides any comments and/or questions to the bureau. The Functional Manager works with the CPIC Team to address the issues and furnish details as requested, and sends an updated package to the OCIO. The CPIC Team then reviews and prepares the analytics for the TIRB and E-Board meetings.

The CPIC Team coordinates with Treasury's Office of Performance Budgeting where required to facilitate exchange of information.

6. Review Investment and Recommend Appropriate Action(s)

The quarterly TIRB Control meetings will be aimed at determining whether the investment has experienced any of the following potential risk factors:

- A particular task is significantly behind schedule or over budget
- Requirements and work scope are constantly changing
- A particular task on the critical path was missed, with no work around
- A major milestone, decision, or work product was missed or will be significantly delayed
- The initiative's functionality does not adequately support the mission, business, or security functions
- A major technical problem with the selected technology has surfaced as part of the change control process, and the problem resolution
- Does not allow the investment to be developed as specified

- Assess if the organizational environment has changed and the current IT initiative is not part of the solution for meeting the business needs.

Based upon the comments of the TIRB, the Project Sponsor/Functional Manager may be required to conduct an alternatives analysis for on-going support, which should answer the following questions:

- Is the investment still feasible (i.e., is it still meeting its performance requirements)?
- Have performance gaps been identified and tracked, and has a mitigation plan been initiated to overcome the gaps?

The TIRB forwards its recommendations to the E-Board for the final decision in situations where investments are in trouble or significant issues are identified.

7. Make Final Investment Decisions

The E-Board will review the recommendations from the TIRB and accelerate, modify, suspend or terminate the investment, as appropriate.

The cost, schedule and performance data for all major investments will be sent to the OMB once it has been reviewed by the E-Board.

8. Work with Project Sponsor to Develop Solutions

Once the E-Board has approved a TIRB recommendation that the IT investment be accelerated, modified, or cancelled, the OCIO should work closely with the Project Sponsor to develop a solution to any problems or issues resulting from the decision.

The Project Sponsor, in coordination with the OCIO, should address the results or changes of the investment risk assessment for the initiative. Plans should be made to eliminate, mitigate or manage identified risks (e.g., financial, acquisition and technical). The ProSight Control Scorecard should be the source for identifying the primary issues resulting from the decision. Once the OCIO and Project Sponsor have agreed to the corrective actions, they will discuss and document the criteria that will be used to resume funding. This documentation is maintained as part of the investment's record and the results are evaluated during the next annual Control Phase review or during the Evaluate Phase.

Prior to the next scheduled review date, the Project Sponsor updates the investment information and initiates another preliminary assessment. This formal monitoring of investment progress, and the determination of risks and returns, continues throughout the Control Phase.

Stage-Gate Reviews:

In addition to the periodic reviews, the TIRB and E-Board also conduct Stage-Gate reviews as investments progress through key milestones/life cycle phases. These review dates are established when setting up the project plan. The focus of these reviews is to understand if the investment met its milestones, assess the quality of product delivered, determine if the investment is still meeting its original purpose, and ultimately decide if funding should be continued.

1.1.2 Non-Major IT Investments

Non-Major IT investments will submit cost, schedule and performance data on a quarterly basis. The Project Manager also completes a simple self-assessment on the investment. The TIRB and E-Board may choose to conduct portfolio reviews of the Non-Majors or review a random sample of the Non-Majors.

EXIT CRITERIA

Prior to exiting the Control Phase, Major IT investments must have:

- Completed investment development
- Confirmed the Post-Implementation Review (PIR) schedule
- Obtained E-Board approval to enter the Evaluate Phase

All Non-Major IT investments should complete all development activity prior to exiting the Control Phase.

Chapter 5 - Evaluate Phase

PURPOSE

The purpose of the Evaluate Phase is to compare actual to expected results after an investment is fully implemented. This is done to assess the investment's impact on mission performance, identify any investment changes or modifications that may be needed, and revise the investment management process based upon lessons learned. As noted in GAO's Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-Making, "the Evaluation Phase 'closes the loop' of the IT investment management process by comparing actuals against estimates in order to assess the performance and identify areas where decision-making can be improved."

The Evaluate Phase focuses on the following outcomes:

- Determining whether the IT investment met its performance, cost, and schedule objectives
- Determining the extent to which the IT capital investment management process improved the outcome of the IT investment.

The outcomes are measured by collecting performance data, comparing actual to projected performance and conducting a Post Implementation Review (PIR) to determine the system's efficiency and effectiveness in meeting performance and financial objectives. The PIR includes a methodical assessment of the investment's costs, performance, benefits, documentation, mission, and level of stakeholder and customer satisfaction. The PIR is conducted by the bureau, and results are reported through the OCIO to the TIRB and E-Board to provide a better understanding of initiative performance and assist the Project Sponsor in directing any necessary initiative adjustments. Additionally, results from the Evaluate Phase are fed back to the Pre-Select, Select, and Control Phases as lessons learned.

This phase also evaluates those projects in the steady state phase of the investment's life cycle to:

- Assess mature investments
- Ascertain their continued effectiveness in supporting mission requirements and remaining useful life
- Evaluate the cost of continued maintenance support
- Assess technology opportunities
- Consider potential retirement or replacement candidates to be considered for Pre-Select

SCOPE

The Evaluate process applies to all investments in the post-acquisition phase for the current fiscal year and will initially be focused on Major IT investments. All Major IT investments are required to complete a detailed PIR to be defined in a subsequent version of this Guide.

Non-Major IT investment managers may complete a less intensive self-assessment for their investment for bureau-level review. The TIRB and E-Board may choose to conduct portfolio reviews of the Non-Majors or review a random sample of the Non-Majors.

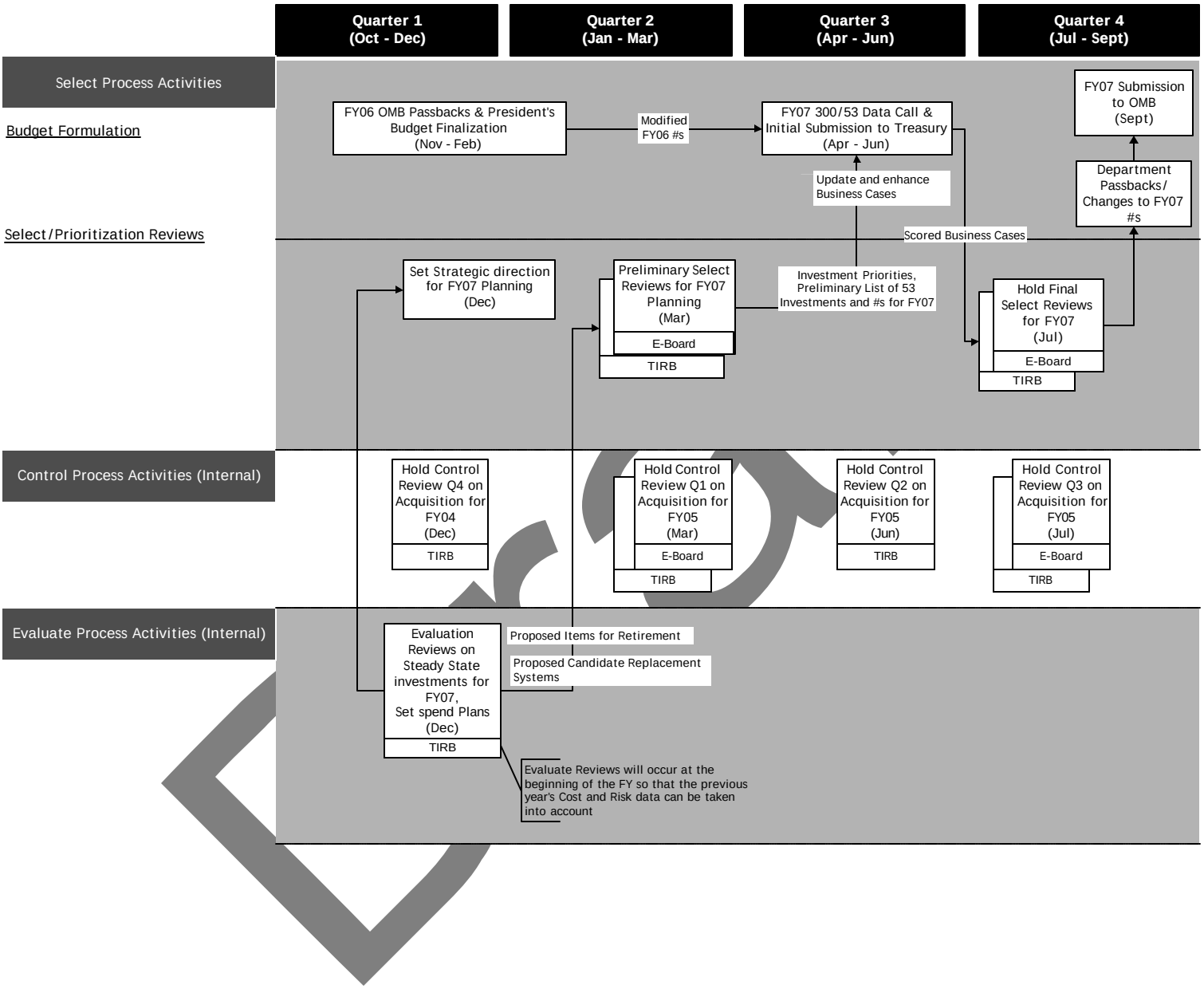
ENTRY CRITERIA – Under Development

PROCESS – Under Development

EXIT CRITERIA – Under Development

Appendix A - CPIC Calendar

Sample FY05 CPIC Calendar



Appendix B – Treasury Information System Life Cycle

PURPOSE

The Treasury Department has an extensive variety of systems, all of which are governed by the rules and principles of the Information System Life Cycle (ISLC). The ISLC Manual is intended to assist bureaus in the general standardization of life cycle management of their information systems. Standardization ensures that systems are developed, acquired, evaluated and operated in an efficient manner, within prescribed budgets and schedule constraints, and that they are responsive to mission requirements.

The ISLC Manual provides Treasury and associated bureau project managers charged with developing systems with standardized modules, methodologies, and guidelines for implementing a structured and consistent approach to IT project development. Bureaus and offices that have already developed information life cycle management documents and implemented practices prescribed therein should use this Manual as a means to generate thought for process improvement. Bureaus and offices without standardized methodologies should utilize this Manual for the management of their systems life cycles.

The Department of the Treasury is in the process of identifying additional architecture-related documentation for each of the life cycle phases of major projects. Documentation requirements will be tied to the Treasury Enterprise Architecture Framework (TEAF). Upon finalization, additionally developed documentation will be added to the ISLC.

The ISLC Manual is located at: http://intranet.treas.gov/cio/policies.asp. The related Treasury Directive, TD 84-01, "Information System Life Cycle (ISLC)" provides further information about Treasury's policy regarding the use of an ISLC and is located at http://www.treas.gov/regs/td84-01.htm.]

Appendix C – Enterprise Architecture Guidelines

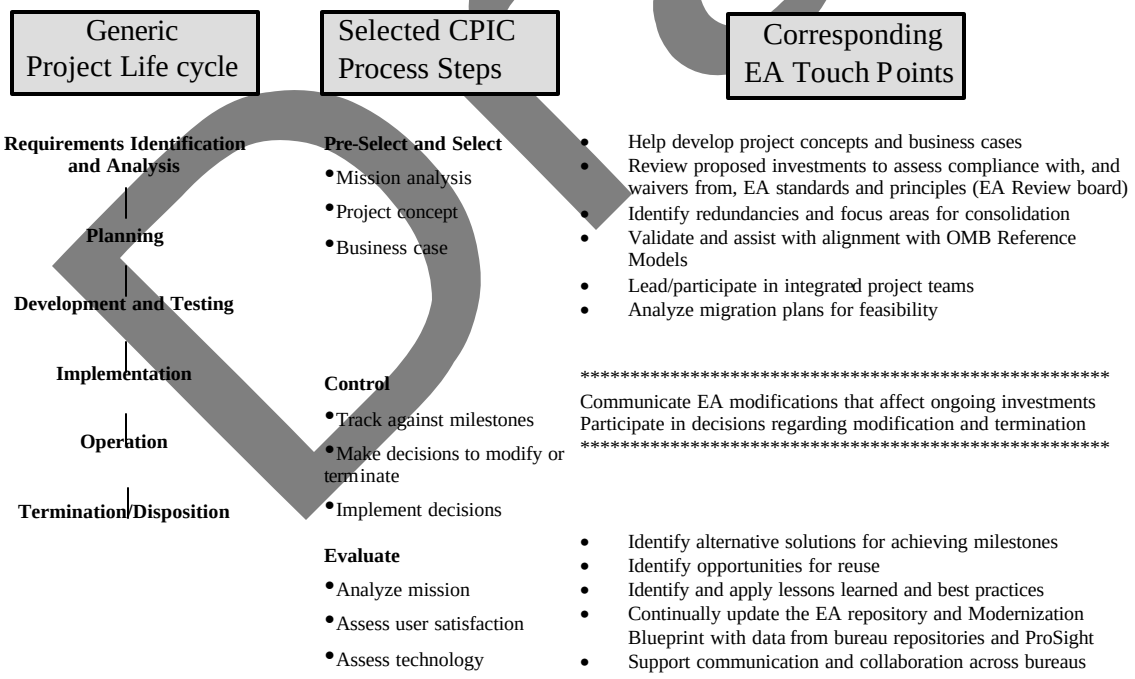
THE ENTERPRISE ARCHITECTURE

The Treasury Enterprise Architecture (EA) will provide direction for the Department's IT capital investment planning to ensure that IT investments align with functional requirements and strategic goals. Similarly, bureau EAs should facilitate bureau IT capital investment planning to ensure that IT investments align with bureau functional requirements and strategic goals. Both the Department and bureau EAs will enable effective IT portfolio management and must fulfill the Office of Management and Budget's (OMB) Federal Enterprise Architecture (FEA) requirements.

The Treasury EA will provide a common framework for defining the existing and target IT environment, providing bureaus a clear view of how their IT investments align with the Department's overall direction. It will provide a blueprint for improving processes, leveraging existing systems and applications, and minimizing risks of IT program and system development. The Treasury EA will also enhance overall IT cost-effectiveness and establish a governance process for future development.

EA processes and data must be tightly integrated with IT portfolio management. Figure 7 illustrates at a high level the integration of EA and the Treasury's CPIC process.

Figure 5: The Role of Enterprise Architecture in the CPIC Process



Development of the Federated Enterprise Architecture

Treasury's Modernization Blueprint is a business-driven management support framework that will drive modernization efforts at Treasury and help implement a Federated Enterprise Architecture Framework for the target environment. The Modernization Blueprint will support the Treasury EA Vision depicted in Figure 6.

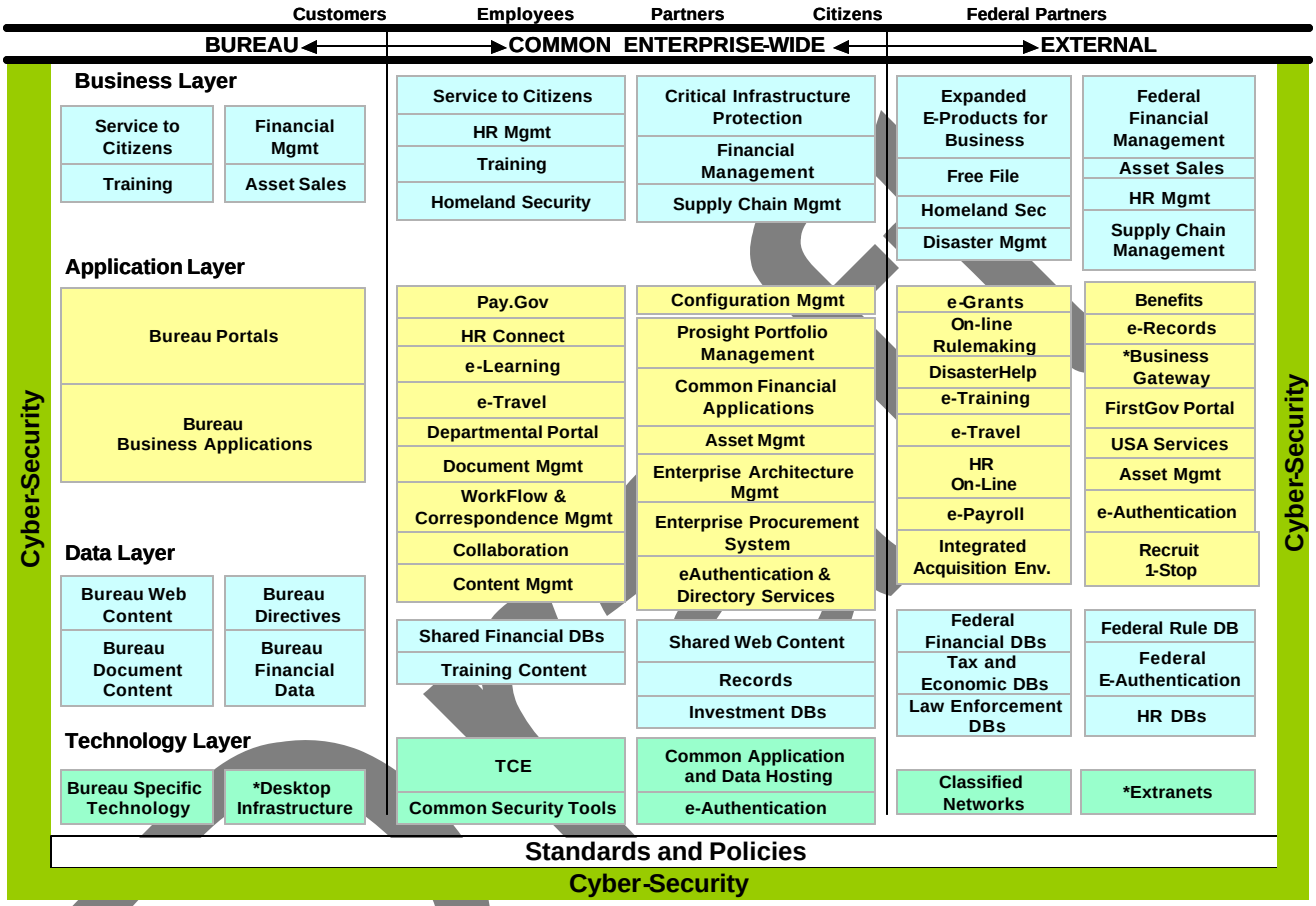


Figure 6: Treasury Enterprise Architecture Vision

Federal Enterprise Architecture Framework

The Treasury EA must also align with the Federal Enterprise Architecture (FEA), which is a business-based framework for Government-wide improvement. The FEA includes a collection of interrelated "reference models" that facilitate the identification of duplicative investments, gaps, and opportunities for collaboration within and across Federal Agencies. The five models are the Business Reference Model (BRM), Service Reference Model (SRM), Data Information Reference Model (DRM), Technical Reference Model (TRM), and Performance Reference Model (PRM). For more information on FEA initiatives and the associated reference models, please see www.feapmo.gov.

Appendix D – Treasury IT Security Policy

PURPOSE

The primary purpose of the Department of the Treasury's Information Technology (IT) Security Program is to establish comprehensive, uniform IT security policies to be followed by each bureau in developing its own specific policies and operating directives. The Treasury IT Security Program serves as a foundation for the bureaus to use for their IT security programs. This regulation is binding on all Treasury bureaus and offices.

National policy and standards guide Treasury security policy and requirements. The Treasury IT Security Program clarifies national policies, adapts them to Treasury's specific circumstances, and imposes additional requirements when necessary.

All documents related to the Treasury IT Security Program are living documents. New sections will be developed to keep pace with advances in technology and policy evolution.

The most current version of the Treasury IT Security Program and policies can be found at the following URL:

http://intranet.treas.gov/eitspa/documents/td85-01/TDP85-01Vol-I-Part-1.pdf

Appendix E – Exhibit 300 Business Case Guide

The Internal Revenue Service's ***Exhibit 300 Business Case Guide*** is a helpful tool in preparing the Office of Management and Budget's (OMB)'s Exhibit 300. It was developed to provide IT project managers with a tool to improve the quality of the business case supporting major IT investments. It can be found at:

http://ram.web.irs.gov/PM/INVESTMENT_MANAGEMENT/exhibit_300_group.htm

Appendix F - Guidance on Project Manager Qualifications

PURPOSE

The success of any project is critically linked to the knowledge, skills, abilities, experience and qualifications of the Project Manager (PM). The Office of Personnel Management (OPM) issued a guide to help agencies properly identify and establish these important positions. ***"Interpretive Guidance for Project Manager Positions"*** provides a general discussion of the project manager function Government-wide and identifies a common set of characteristics (i.e., duties and associated knowledge, skills and abilities/competencies) for PMs (both IT and non-IT).

The link to OPM's "***Interpretative Guidance for Project Manager Positions"*** document is: http://www.opm.gov/fedclass/cg03-0001.pdf

QUALIFICATIONS

On July 6, 2004, the CIO Council's Workforce and Human Capital for IT Committee issued a memorandum to all CIOs relaying its efforts to define key IT project management KSAs and establish a validation framework to ensure that all PMs who manage major IT initiatives have the necessary skill set. It included attachments defining the 3 IT project complexity levels and the validation criteria for determining whether PMs are "Validated" (i.e., the PM has met the appropriate training and experience requirements for the project managed, and for the related complexity level of the project), "Validated with Exception" (i.e., PM has not met all of the appropriate training and experience requirements; however, s/he warrants an agency waiver based on demonstrated successful performance on the job), or "In the Process of Being Validated" (i.e., PM has not fully met appropriate training and experience requirements; however, actions are being taken to address the shortfalls).

On July 21, 2004, the Office of Management and Budget (OMB) issued a memorandum reminding CIOs to ensure that all major investments are managed by PMs qualified in accordance with the CIO Council guidance. It also directed CIOs to document both the investment's complexity level and the PM's validation status as part of the Exhibit 300 documentation.

Project Managers are expected to achieve and demonstrate baseline skills in applicable competency areas, through a combination of on-the-job training, formal education, training and previous work experience. PM and IT PM KSAs and competencies are described in OPM's "***Interpretive Guidance for Project Manager Positions."***

If an investment has been classified as a complexity level 2 project, for example, it is incumbent upon the investment sponsor to identify which IT-specific KSAs and competencies are required for the management of the investment and then assign a PM who possesses the requisite KSAs and competencies. Detailed information should be provided in Section I.D. of Exhibit 300 listing the applicable PM KSAs and competencies required for the complexity level of the given investment and summarizing the relevant experience and training that qualifies the PM for each. Simply stating that the PM has the requisite knowledge is not as strong as saying that s/he possesses a particular expertise as a result of 3 years experience working on or managing project X, which required that particular skill set.

A statement that the PM is "Validated", "Validated with Exception", or "In the Process of Being Validated" (with an explanation of steps being taken to remediate missing skills and competencies) is also required. Finally, please be sure to specifically identify both the complexity level of the project and the qualification status of the PM.

Appendix G - Performance Measurement

PURPOSE

Performance measurement is the process whereby an organization establishes the parameters within which programs, investments, and acquisitions are reaching the desired results in support of mission goals. Performance measures are set during the Select Phase and assessed during subsequent phases. The focus of performance measurements is on outcomes, or how well the IT investment enables the program or agency to accomplish its primary mission. Consequently, performance measurement should look beyond measures of input (resource consumption), activities (milestones), and output (production numbers), which are more directly related to operational performance. This focus, however, does not imply that input, activity, and output measures are not useful. Indeed, internal measures are used to track resources and activities and make necessary adjustments since investments are only successful if hardware, software, and capabilities are delivered on time and meet specifications.

Performance is evaluated using two criteria - effectiveness and efficiency. Effectiveness demonstrates that an organization is doing the correct things, while efficiency demonstrates that an organization is doing things optimally. New acquisitions and upgrades should include a business case indicating the investment will result in effectiveness or efficiency improvements. For example, a new computer network might result in enhanced efficiency because work is processed faster, digital images are transferred among remote sites, or messages are transmitted more securely. Some questions that facilitate performance measure development include:

- What product will be produced, shared, or exchanged?
- Who will use the results?
- What decisions or actions will result from delivery of products from this system?

Answers to these questions will help project managers develop effective performance measures with the following characteristics:

- Strategically relevant
    - Directed to factors that matter and make sense
    - Promote continuous and perpetual improvement
    - Focus on the customer
    - Agreed to by stakeholders
- Short, clear, and understandable
    - Measurable/quantifiable
    - Meaningful
- Realistic, appropriate to the organizational level, and capable of being measured
- Valid
    - Link to activity and provide a clear relationship between cause and effect
    - Focus on managing resources and inputs, not simply costs
    - Discarded when utility is lost or when new, more relevant measures are discovered.

PROCESS

Outcome-based performance measures are developed through a series of steps. It is important to understand that developing measures is only one part of the more comprehensive process. After measures are developed, baseline information is gathered if it does not already exist, and performance information is collected, analyzed, interpreted, and used throughout the investment's life. These steps require a commitment of management attention and resources.

The following five steps are recommended to establish performance measures:

1. Analyze how the investment supports the mission goals and objectives and reduces performance gaps.
2. Develop IT performance objectives and measures that characterize success.
3. Develop collection plan and collect data.
4. Evaluate, interpret, and report results.
5. Review process to ensure it is relevant and useful.

Steps 1-3 are completed during the Pre-Select and Select Phases. Steps 4 and 5 are completed during the Control Phase, with follow-up during the Evaluate Phase. These process steps are defined in the following sections.

1. Analyze How the Investment Supports the Mission and Reduces Performance Gaps

Effective outcome-based performance measures are derived from the relationship between the new investment and how users will apply investment outputs. Specifically, the user's mission and critical success factors (those activities and outputs that must be accomplished if users are to achieve their mission) must be clearly understood. The critical element of this step is linking proposed and in-process IT investments and activities to the user mission and critical success factors.

This concept is often described as a method of strategically aligning programs and support functions with the agency's mission and strategic priorities. The first step in effectively developing outcome-based IT performance measures is to identify the organization's mission, the critical tasks necessary to achieve the mission, and the strategies that will be implemented to complete those tasks. One structured method of accomplishing this step is to develop a logic model linking the mission to IT performance measures.

Answers to the following questions will aid logic model development:

- What will the system do? What major functions or features will the system provide (i.e., what functionality or information)? Is this system a stand-alone system or is it used or integrated with another larger system? What is the purpose of that system? How is it used?
- What aspects of the system, service, and information quality are needed for the system to perform optimally or acceptably?
- Identify who will use the system. What is the principal business task they perform? How will using the system help them with that task?
- How does completion of that task contribute to a business function?
- How does completion of the business function contribute to achievement of the program goals?
- How does completion of program goals contribute to organizational goals?
- How does completion of organizational goals contribute to Departmental goals?
- Determine whether there are related IT investments that impact the mission area and goal(s) selected. Understand the relationships between various IT investments that address the same or similar needs. This will help identify potential areas for consolidation.

Once the mission is clearly defined, a gap analysis is performed to understand how IT can improve mission performance. The analysis begins with the premise that IT will improve effectiveness, efficiency, or both. To accomplish this, requirements are defined and the following questions are answered:

- Why is this application needed?
- How will the added functionality help users accomplish the mission?
- How will the added functionality improve day-to-day operations and resource use?

The investment initiation and requirement documentation also describes gaps between the current and future mission and strategy in terms of how overall efficiency and effectiveness will be improved. Project Managers assist users in developing a baseline measurement and comparing the baseline to the business objective to identify gaps. This analysis defines the investment need as the basis for determining what success will look like (e.g., the investment is successful when the gap is reduced by "x" amount).

2. Develop IT Performance Measures that Characterize Success

Well-designed performance measures define success parameters for the IT initiative. The following questions should be asked for each performance measure and answered affirmatively before deploying the measure:

- Is it useful for monitoring progress and evaluating the degree of success?
- Is it focused on outcomes that stakeholders will clearly understand and appreciate?
- Is it practical? Does it help build a reliable baseline and cost-effectively collect performance data at periodic intervals?
- Can the performance measure be used to determine the level of investment risk and whether the investment will meet performance targets?

Answering these questions affirmatively results in an agreement that the IT investment, by supporting improvements identified earlier, will support organizational goals and objectives. Additionally, it will help limit the number of performance measures and focus management attention on the requirements that have the greatest priority or impact. After three to five major requirements have been identified, the following questions are asked:

- What are the performance indicators for each major requirement?
- How well will those outputs satisfy the major requirements?
- What additional steps must be taken to ensure outputs produce intended outcomes?
- How does this IT investment improve capabilities over the current method?

Once requirements to be measured are identified, determine when each requirement is met. Some requirements may need to be changed if they are too difficult to measure. Or, if the requirement has indirect rather than direct outcomes, it may be necessary to use "surrogate" performance measures that mirror actual outcomes. For example, it is difficult to measure the direct benefit of computer-based training (CBT) systems. In this case, a surrogate measure might be the percentage of staff achieving certifications through the CBT with implications that certified staff are more desirable than non-certified staff because they have demonstrated initiative and are more proficient.

Of the possible performance indicators, select one or more to report performance against each requirement. One performance indicator may provide information about more than one requirement. The objective is to select the fewest number of performance indicators that will provide adequate and complete information about progress. Selecting the fewest performance indicators necessary is important because data collection and analysis can be costly. The cost is acceptable if the benefit of the information received is greater than the cost of performance measurement, and if the data collection does

not hinder accomplishment of primary missions. Costs are calculated by adding the dollars and staff time and effort required to collect and analyze data. When calculating costs, consider whether they are largely confined to initial or up-front costs, or if they will occur throughout the IT life cycle. For example, the cost of developing and populating a database may have a large initial cost impact but diminish significantly for later maintenance. Answers to the following questions will help to determine the cost of tracking a specific performance indicator:

- What data are required to calculate the performance measure?
- Who collects the data and when?
- What is the verification and validation strategy for the data collection?
- What is the method to ensure the quality of the information reported?

In addition to determining costs, it is also necessary to determine the baseline performance, target performance, and expected time to reach the target. The baseline value is the start point for future change. If performance measures are currently in use, the data collected can provide the baseline. Otherwise, the manager must determine the baseline by a reasonable analysis method including the following:

- Benchmarks from other agencies and private organizations
- Initial requirements
- Internal historical data from existing systems
- Imposed standards and requirements

To determine the target value, obtain stakeholder agreement regarding the quantifiable benefits of the new system. These targets may be plotted as a function over time, especially for IT investments that are being installed or upgraded or as environmental factors change. However, incremental improvement is not necessarily success. The targeted improvement from the baseline must be achieved within the designated timeframe to be counted as a success.

3. Develop Collection Plan and Collect Data

To ensure performance data is collected in a consistent, efficient, and effective manner, it is useful to develop and publish a collection plan so all participants know their responsibilities and can see their contributions. The collection plan details the following items:

- Activities to be performed
- Resources to be consumed
- Target completion and report presentation dates
- Decision authorities
- Individuals responsible for data collection

In addition, the collection plan answers the following questions for each performance measure:

- How is the measurement taken?
- What constraints apply?
- Who will measure the performance?
- When and how often are the measurements taken?
- Where are the results sent and stored, and who maintains results?
- What is the cost of data collection?

While costs should have been considered during the previous step, the actual cost will be more evident at this stage. Excessively costly performance measures may require Project Managers to find a different, less costly mix of performance measures for the IT investment. Or it may be necessary to creatively collect the measures to reduce collection cost. For example, a sampling may produce sufficiently

accurate results at significantly less cost than counting every occurrence, and some results can be automatically generated by the system and accessed through a standard report.

To ensure data is being collected in a cost-effective and efficient manner, it is important to ensure the data collectors are involved in developing performance measures. The collectors will do a much better job if they believe the performance measures are valid and useful, and they will have insight regarding the best way to collect the data.

4. Evaluate, Interpret, and Report Results

Performance measures are useful in monitoring the investment against expected benefits and costs. To evaluate performance, data is compiled and reported according to the collection plan that was previously constructed. The data is then evaluated and the following questions are answered regarding the collected data and the investment's performance:

- Did the investment exceed or fall short of expectations? By how much and why?
- If the data indicates targets were successfully reached or exceeded, does that match other situational perceptions?
- What were the unexpected benefits or negative impacts to the mission?
- What adjustments can and should be made to the measures, data, or baseline?
- What actions or changes would improve performance?

This evaluation reveals any needed adjustments to the IT investment or performance measures. It also helps to surface any lessons learned that could be fed back to the investment management process.

5. Review Process to Ensure It Is Relevant and Useful

Performance measures provide feedback to managers and help them make informed decisions on future actions. To ensure that performance measures are still relevant and useful, answer the following questions:

- Are the measures still valid?
- Have higher-level mission or IT investment goals, objectives, and critical success factors changed?
- Are threshold and target levels appropriate in light of recent performance and changes in technology and requirements?
- Can success be defined by these performance measures?
- Can improvements in mission or operations efficiency be defined by the measures?
- Have more relevant measures been discovered?
- Are the measures addressing the right things?
- Are improvements in performance of mission, goals, and objectives addressed?
- Are all objectives covered by at least one measure?
- Do the measures address value-added contributions made by overall investment in IT and/or individual programs or applications?
- Do the measures capture non-IT benefits and customer requirements?
- Are costs, benefits, savings, risks, or ROI addressed?
- Do the measures emphasize the critical aspects of the business?
- Are the measures the right ones to use?
- Are measures targeted to a clear outcome (results rather than inputs or outputs)?
- Are measures linked to a specific and critical organizational process?
- Are measures understood at all levels that must evaluate and use them?
- Do the measures support effective management decisions and communicate achievements to internal and external stakeholders?
- Are measures consistent with individual motivations?
- Are measures accurate, reliable, valid, and verifiable?

- Are measures built on available data at reasonable costs and in an appropriate and timely manner for the purpose?
- Are measures able to show interim progress?
- Are measures used in the right way?
- Are measures used in strategic planning (e.g., to identify baselines, gaps, goals, and strategic priorities) or to guide prioritization of program initiatives?
- Are measures used in resource allocation decisions and task, cost, and personnel management?
- Are measures used to communicate results to stakeholders?

Appendix H – Project Management

PURPOSE

Project management is a crucial element for IT investment success. It involves executing the necessary skills and management practices to ensure successful investment development and implementation. This integrated skill set addresses such areas as project planning, scope management, cost, schedule, performance, risk, and organizational management. The Project Manager is ultimately responsible for the investment's success and ensuring the investment delivers the functionality and capabilities expected by stakeholders (i.e., users, customers, and senior leaders). Perhaps the greatest project management challenge is identifying risks and then executing management techniques that mitigate the risks to ensure timely and successful completion.

COMPONENTS

Project Managers should complete the following project management components to help ensure the investment's successful completion:

Project Planning—Project planning is a critical element of every successful investment. It provides a foundation on which to base anticipated efforts. Additionally, it helps identify investment components and illustrates these components in a project plan. Project planning includes:

- Scope definition
- Activity identification
- Activity duration estimation
- Activity sequencing
- Cost estimation
- Schedule development
- Project staffing/resourcing
- Project plan development.

Investments typically involve multiple components that may be complex or interface with other proposed/ existing systems or data. Integrating these components can be challenging. To support improved integration and management, it is useful to develop a Work Breakdown Structure (WBS). A WBS provides a management framework by separating the investment life cycle into distinct, manageable components related to various activities and interfaces. Each component is defined with appropriate sub-components and activities, such that one individual or team can implement each component. This enables the Project Manager to more effectively estimate the cost and schedule for completing individual components, supports sequencing activities and identification of interdependencies, and provides a basis to identify milestones and develop resource and schedule estimates. Table 3 provides an example of a WBS.

Scope Management — The scope frames what is expected of the investment's ultimate capability and functionality. As such, it directly impacts functional and system requirements development. The Project Manager should obtain the Project Sponsor's concurrence on the investment's scope, and then effectively manage that scope and mitigate "scope creep" by maintaining requirements traceability throughout the project life cycle and implementing configuration management procedures. It is important for the Project Sponsor to determine whether existing requirements have been redefined, new requirements have been identified, or existing requirements eliminated based upon events. The project scope should be based on the business requirements identified during the Pre-Select Phase and traced throughout the project life cycle.

Plan Project	
100	Define Project
10	Determine Project Objectives
20	Define Project Scope
30	List Project Products
40	Determine Project Constraints
50	Select Project Approach
60	Determine Project Standards
70	Assess Project Risks
200	Make Project Plan
10	Define Work Breakdown Structure
20	Determine Activity Dependencies
30	Define Project Milestones
40	Determine Project Organization
50	Estimate Effort
60	Allocate Resources
70	Schedule Activities
80	Develop Budget
90	Assess Project Risks
300	Obtain Project Approval
10	Assemble Project Plan
20	Present Project Plan
30	Agree to Project Plan
MPMP1	Milestone PMP1

Table 3: Example of a Project Planning WBS

All system features, functions, and capabilities should be linked to original customer requirements throughout the entire planning, acquisition, design and implementation phases to ensure accurate system or network design.

Risk—Risk is inherent in every investment. To aid in effectively identifying, analyzing, and managing risk, Project Managers should develop a risk management plan early in the planning stages, ideally during the Select Phase. Project Managers should employ Subject Matter Experts (SMEs) among the various functional areas of the investment to identify risk and provide mitigation strategy. Key risk areas may include technology, cost, schedule, and performance/quality. The risk management plan is continually updated throughout the investment's life cycle and is part of annual and periodic reviews.

Cost and Schedule Management—Effective investment management entails establishing cost and schedule baselines. Actual information is continuously collected, analyzed, and compared to original projections and the current baseline. Variances are identified, and appropriate actions are taken to inform senior management and mitigate the impacts of increased costs and schedule slippages. The WBS, milestones, activities, and project plan assist the development and tracking of cost and schedule. Earned value techniques provide a means to more completely evaluate costs and schedule, and assist in early risk identification. See Appendix I – Earned Value Management.

Performance— An investment's ultimate objective is to meet or exceed stakeholder performance expectations by ensuring the investment satisfies the mission need and business requirements. In the Pre-Select and Select Phases, performance planning includes defining performance measures and identifying activities required to ensure performance objectives will be met (see Appendix G - Performance Measurement).

This may include benchmarking to establish a baseline and to further refine the investment's performance objectives. The Control Phase includes a continual monitoring of the performance baseline to potentially include quality reviews, tests, or pilot tests. In the Evaluate Phase, a PIR helps compare actual investment performance with expectations. Additionally, performance measures are analyzed to determine whether investments are continuing to meet mission needs and performance expectations.

Organizational Management—Organizational management skills needed to manage an investment include project staffing, communications, and organizational understanding. Project Managers should be able to identify the needed skill sets and assign appropriate personnel to accomplish a given set of activities. Project Managers should also have the requisite interpersonal and leadership skills to communicate with both the project team and stakeholders. This includes possessing a vision for the investment and how to best meet stakeholder expectations, as well as ensuring the project team is able to focus on assigned tasks/activities. Additionally, Project Managers should be able to communicate and build consensus with key stakeholders, since this ultimately impacts the investment's success or failure.

Appendix I – Earned Value Management

PURPOSE

Earned value analysis is a program management technique that uses an investment's past performance and work as indicators of the investment's future. This enables the Project Manager (PM) to evaluate and gain insight into an investment's actual schedule and financial progress relative to the project plan. Earned value analysis identifies expenditure and scheduling projections for established critical path milestones, or significant points in the investment's development where the initiation of each milestone is dependent on the completion of a prior milestone. The PM tracks actual progress and expenditures at the completion of each critical path milestone against planned figures to obtain variances. These variances can then be used to identify schedule and cost overruns so they can be resolved as quickly as possible. The earned value methodology requires an investment to be fully defined at the outset. The information that is required to complete an earned value analysis includes:

- List of all critical path milestones
- Budgeted percentage of work performed for each critical path milestone
- Planned critical path milestone start and completion date
- Planned expenditures for each critical path milestone
- Total investment budget
- Budgeted dollars for work performed for each critical path milestone
- Planned investments start and end dates.

The approach can provide accurate and reliable assessments from as early as 15 percent into the investment's life cycle. It provides early indications of cost and schedule variances in order to take appropriate risk mitigation steps. Typically, investments that are over budget when 15 percent of the investment is finished will result in cost overruns. Once a cost overrun is identified, it can generally be reduced by only 10 percent, which indicates the need to support early awareness of potential cost and schedule risks. Early investment assessment and identification of cost and schedule variances is critical for the overall success of the investment, and supports improved cost and schedule control.

PROCESS

Before completing earned value analysis, the PM needs to complete the following project management tasks:

- Develop a Work Breakdown Structure (WBS)
- Define investment activities
- Allocate costs to each WBS element
- Schedule each activity
- Chart and evaluate the investment's status

The PM will then have the basis for periodically assessing the investment's performance and completing the following four steps in the earned value analysis process:

1. Update the Schedule

The scheduled activities are reported as started, completed, or with a remaining duration as appropriate. For unfinished activities, the percent complete is reported. For work that results in discrete deliverable products (e.g., reports, studies, briefings, etc.), it generally is easy to determine the percent complete. For efforts that are not so easily measured, special "earning rules" may be employed. A common "earning rule" is to report percent complete according to completed milestones within an activity.

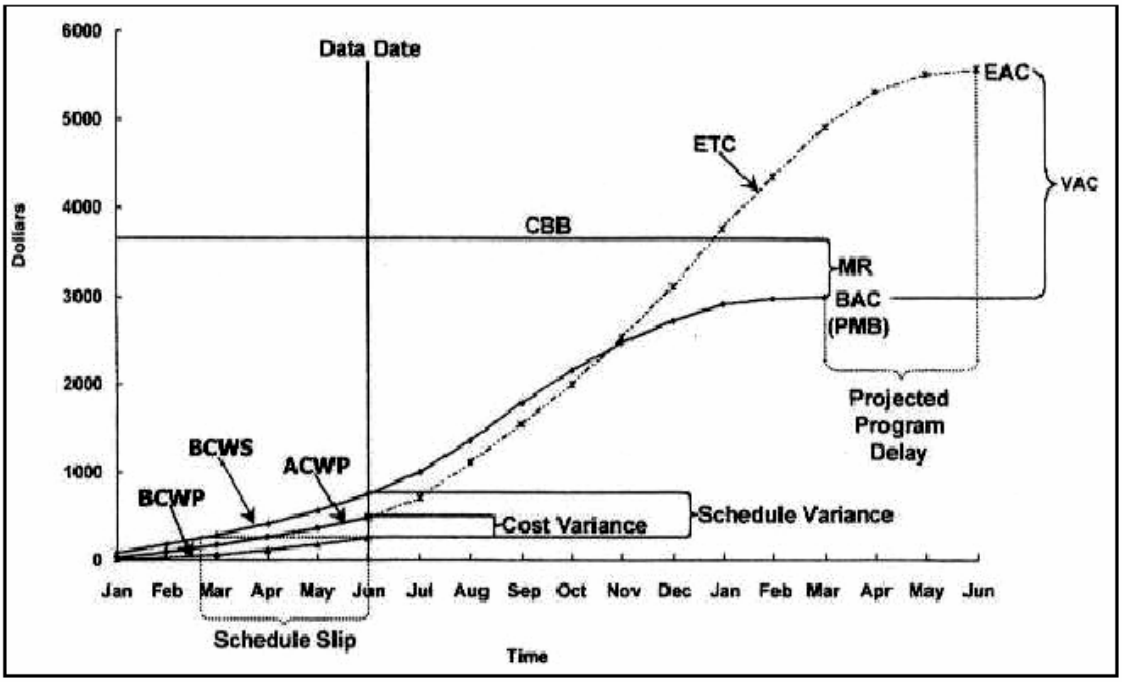
2. Record Actual Cost

After updating the schedule, actual costs from the investment's accounting system are recorded. In situations where the accounting system does not provide the level of detail required to obtain actual accounting costs, the PM may need to estimate what percentage of actual costs should be assigned to the investment.

3. Calculate Earned Value Measures

After recording actual costs for the reporting period, earned value measures are calculated and reports generated. This can be done, in part, by creating an earned value analysis chart as shown in Figure I-1.

Figure I-1. Sample Earned Value Analysis Chart



The sample chart includes the following earned value measures:

Actual Cost of Work Performed (ACWP) — The costs actually incurred and recorded in accomplishing the work performed within a given time period.

Budget at Completion (BAC) — The sum of all budgets established for the contract.

Budgeted Cost for Work Performed (BCWP)—The sum of the budgets for completed work packages and completed portions of open work packages, plus the applicable portion of the budgets for level of effort and apportioned effort.

Budgeted Cost of Work Scheduled (BCWS) — The sum of all WBS element budgets that are planned or scheduled for completion.

Contract Budget Base (CBB) —The total cost of all budgeted activities necessary to complete a task.

Cost Performance Index (CPI) —Earned value divided by the actual cost (BCWP divided by ACWP).

Cost Variance (CV) —Earned value minus the actual cost (BCWP minus ACWP).

Estimate at Completion (EAC) —The actual costs incurred, plus the estimated costs for completing the remaining work.

Estimate to Complete (ETC) —The cost necessary to complete all tasks from the ACWP end date through the investment's conclusion.

Management Reserve (MR)—The amount of the total allocated budget withheld for management control purposes rather than designated for the accomplishment of a specific task or set of tasks; not part of the performance measurement.

Performance Measurement Baseline (PMB)—The time-phased budget plan against which investment performance is measured.

Schedule Variance (SV)—Earned value minus the planned budget for the completed work (BCWP minus BCWS).

Variance at Completion (VAC)—The difference between the total budget assigned to a contract, WBS element, organizational entity, or cost account and the estimate at completion; represents the amount of expected overrun or under run.

4. Analyze the Data and Report Results

The critical path milestones used to complete the earned value analysis are directly derived from the project plan. These are the milestones that require completion before a successive milestone can begin. The data is collected and monitored for each milestone throughout the project to achieve maximum effectiveness.

Appendix J – Net Present Value Calculation Method

Treasury OCIO supports the use of a standard method of calculating Net Present Value (NPV). Since Treasury OCIO is not currently using an American National Standards Institute (ANSI)-certified tool for this calculation, a spreadsheet has been developed by the Bureau of Engraving and Printing (BEP) that supports this calculation. To obtain a copy of this Excel spreadsheet tool, please contact your Treasury CPIC Team Desk Officer – see Appendix N - CPIC Team and Bureau CPIC Coordinators.

Appendix K - Treasury Scoring Methodology

PURPOSE

The Treasury Office of the Chief Information Officer (OCIO) scores each major IT investment business case prior to submitting the full Treasury IT portfolio to OMB. The Treasury Scoring Methodology is built on the Office of Management and Budget's (OMB) scoring categories, and adds additional categories, as follows:

- OMB Scoring Categories:
  - President's Management Agenda
  - Performance Goals
  - Program Management
  - Alternatives Analysis
  - Risk Management
  - Acquisition Strategy
  - Performance Based Management System
  - Enterprise Architecture
  - Security and Privacy
  - Life-Cycle Costs
- Additional Treasury-Specific Scoring Categories:
  - Business Case Description
  - Business Case Justification
  - Program Manager Qualification/Levels

The process by which the OCIO scores each of the categories is detailed in the Department's Treasury Scoring Methodology located at http://www.treas.gov/offices/cio/capital-planning/.

Appendix L – Glossary of Terms and Acronyms

GLOSSARY OF TERMS

Acquisition Plan	A document used to facilitate acquisition planning. Φ It must address all the technical, business, management, and other considerations that will control the acquisition. Φ It must identify those milestones at which decisions should be made. Φ Specific content will vary, depending on the nature, circumstances, and stage of the acquisition. Φ Plans for service contracts must describe the strategies for implementing performance-based contracting methods or provide rationale for not using such methods.
Actual Cost of Work Performed	The costs actually incurred and recorded in accomplishing the work performed within a given time period.
Architectural Alignment	Degree to which the IT initiative is compliant with USDA's information technology architecture.
Architecture	An integrated framework for evolving or maintaining existing technologies and acquiring new technologies to support the mission(s).
Benefit	Quantifiable or non-quantifiable advantage, profit, or gain.
Benefit-Cost Ratio	The Total Discounted Benefits of an investment divided by the Total Discounted Costs of the investment. If the value of the Benefit-Cost Ratio is less than one, the investment should not be continued.
Budget at Completion	The sum of all budgets established for the contract.
Budgeted Cost for Work Performed	The sum of the budgets for completed work packages and completed portions of open work packages, plus the applicable portion of the budgets for level of effort and apportioned effort.
Budgeted Cost of Work Scheduled	The sum of all WBS element budgets that are planned or scheduled for completion.
Business Case	Structured proposal for business improvement that functions as a decision package for organizational decision-makers. A business case includes an analysis of business process performance and associated needs or problems, proposed alternative solutions, assumptions, constraints, and risk-adjusted cost-benefit analysis (CBA).
Business Process	A collection of related, structured activities or chain of events that produce a specific service or product for a particular customer or group of customers.
Business Process Reengineering	A systematic, disciplined approach to improving business processes that critically examines, rethinks, and redesigns mission delivery processes.
Capital Asset	Tangible property, including durable goods, equipment, buildings, installations, and land.
Contract Budget Base	The total cost of all budgeted activities necessary to complete a task.
Control Phase	Capital planning phase that requires ongoing monitoring of information technology investments against schedules, budgets, and per-

	formance measures.
Cost-Benefit Analysis	An evaluation of the costs and benefits of alternative approaches to a proposed activity to determine the best alternative.
Cost Performance Index	Earned value divided by the actual cost incurred for an investment.
Cost Variance	Earned value minus the actual cost incurred for an investment.
Customer	Groups or individuals who have a business relationship with the organization; those who receive or use or are directly affected by the products and services of the organization.
Data Documentation	Compilation of materials including data dictionary, decomposition diagrams, and data models.
Description of Initiative	Brief overview of initiative of no more than 100 words to include: Φ Short summary of proposed initiative Φ Statement of the business functions or processes the initiative supports Φ Brief summary of benefits resulting from the initiative (tangible or intangible).
Design Documentation	Document that includes system design diagrams.
Discount Factor	The factor that translates expected benefits or costs in any given future year into present value terms. The discount factor is equal to $1/(1 + i)t$ where i is the interest rate and t is the number of years from the initiation date for the program or policy until the given future year.
Discount Rate	The interest rate used in calculating the present value of expected yearly benefits and costs.
Earned Value Analysis	A structured approach to project management and forecasting including comparisons of actual and planned costs, work performed, and schedule.
Estimate at Completion	The actual costs incurred, plus the estimated costs for completing the remaining work.
Estimate to Complete	The cost necessary to complete all tasks from the actual cost of work performed end date through the investment's conclusion.
Evaluate Phase	Capital planning phase that requires information technology investments to be reviewed once they are operational to determine whether the investments meet expectations.
Expected Outcome	Projected end result of the initiative (e.g., system(s) being replaced or improved customer service) that is directly linked with performance measures.
Feasibility Study	Preliminary research performed to determine the viability of the proposed initiative by performing an alternatives analysis, including market research and extensive interviews with subject matter experts. Also includes a proposed technical approach and preliminary cost, scope, and schedule data.
Financial System	An information system used for any of the following: Φ Collecting, processing, maintaining, transmitting, or reporting data about financial events Φ Supporting financial planning or budgeting activities Φ Accumulating and reporting cost information Φ Supporting the preparation of financial statements.

Functional Requirements	A description of system capabilities or functions required to execute a required process such as a communication link between several locations and generating specific reports.
Hardware/Equipment	Includes any equipment used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information (e.g., computers and modems); capital and non-capital purchases or leases.
Independent Verification and Validation	An independent review conducted by persons separate from the management and operation of the investment or system.
Inflation	The proportionate rate of change in the general price level, as opposed to the proportionate increase in a specific price. Inflation is usually measured by a broad-based price index, such as the implicit deflator for Gross Domestic Product or the Consumer Price Index.
Information System	A discrete set of information resources organized for the collection, processing, maintenance, transmission, and dissemination of information in accordance with defined procedures, whether automated or manual.
Information System Lifecycle	The duration of the system life typically organized into four phases: initiation, development, operation, and disposal.
Information Technology	Any equipment or interconnected system or subsystems or equipment used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information.
Infrastructure	The IT operating environment (e.g., hardware, software, and communications).
Lifecycle Benefits	The overall estimated benefits for a particular program alternative over the time period corresponding to the life of the program including: Φ Cost/expense reduction (productivity and headcount), Φ Other expense reductions (operational), Φ Cost/expense avoidance, and Φ Revenue-related savings.
Lifecycle Cost	The overall estimated cost for a particular program alternative over the time period corresponding to the life of the program, including direct and indirect initial costs plus any periodic or continuing costs of operation and maintenance.
Major Information System	An information system that requires special management attention because of its importance to an agency mission (mission critical); its high development, operating, or maintenance costs; or its significant role in the administration of agency programs, finances, property, or other resources. All mission critical systems are, therefore, major systems.
Management Reserve	The amount of the total allocated budget withheld for management control purposes rather than designated for the accomplishment of a specific task or set of tasks; not part of the performance measurement.
Net Present Value	The difference between the discounted present value of benefits and the discounted present value of costs. Also referred to as the

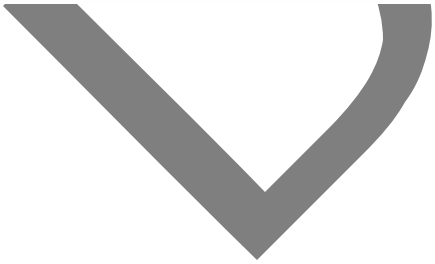
	discounted net.
Opportunity Costs	Cost of not investing in the initiative or cost of a forgone option.
Payback Period	The number of years it takes for the cumulative dollar value of the benefits to exceed the cumulative costs of an investment.
Performance Indicator	Description of: Φ What is to be measured, including the metric to be used (e.g., conformance, efficiency, effectiveness, costs, reaction, or customer satisfaction) Φ Scale (e.g., dollars, hours, etc.) Φ Formula to be applied (e.g., percent of "a" compared to "b," mean time between failures, annual costs of maintenance, etc.) Φ Conditions under which the measurement will be taken (e.g., taken after system is operational for more than 12 hours, adjusted for constant dollars, etc.)
Performance Measurement Baseline	The time-phased budget plan against which investment performance is measured.
Performance Measures	Method used to determine the success of an initiative by assessing the investment contribution to predetermined strategic goals. Measures are quantitative (e.g., staff-hours saved, dollars saved, reduction in errors, etc.) or qualitative (e.g., quality of life, customer satisfaction, etc.).
Post-Implementation Review	Evaluation of the information technology investment after it has been fully implemented or terminated to determine whether the targeted outcome (e.g., performance measures) of the investment has been achieved.
Pre-Select Phase	Capital planning phase that provides a process to assess whether information technology investments support strategic and mission needs.
Project Plan	A document that describes the technical and management approach to carrying out a defined scope of work, including the project organization, resources, methods, and procedures and the project schedule.
Return	The difference between the value of the benefits and the costs of an investment. In a cost-benefit analysis it is computed by subtracting the Total Discounted Costs from the Total Discounted Benefits, and is called the Total Discounted Net.
Return on Investment	Calculated by dividing the Total Discounted Net by the Total Discounted Costs. To express it as a percentage, multiply by 100. It can also be expressed as (Total Discounted Benefits minus Total Discounted Costs) divided by Total Discounted Costs.
Risk	A combination of the probability that a threat will occur, the probability that a threat occurrence will result in an adverse impact, and the severity of the resulting impact.
Risk Assessment and Management Plan	A description of potential cost, schedule, and performance risks, and impact of the proposed system to the infrastructure. Includes a sensitivity analysis to articulate the effect different outcomes might have on diminishing or exacerbating risk. Provides an approach to managing all potential risks.
Risk Management	The process concerned with identifying, measuring, controlling, and minimizing risk.

Schedule Variance	Earned value minus the planned budget for the completed work.
Security	Measures and controls that ensure the confidentiality, integrity, availability, and accountability of the information processes stored by a computer.
Security Plan	Description of system security considerations such as access, physical or architectural modifications, and adherence to Federal and USDA security requirements.
Select Phase	Capital planning phase used to identify all new, ongoing, and operational investments for inclusion into the information technology portfolio.
Sensitivity Analysis	An analysis of how sensitive outcomes are to changes in assumptions. Assumptions about the dominant cost or benefits elements and the areas of greatest uncertainty deserve the most attention.
Software	Any software, including firmware, specifically designed to make use of and extend the capabilities of hardware/equipment.
Steady-State Phase	Capital planning phase that provides the means to assess mature information technology investments to ensure they continue to support mission, cost, and technology requirements.
Sunk Cost	A cost incurred in the past that will not be affected by any present or future decisions. Sunk costs should be ignored in determining whether a new investment is worthwhile.
Technical Requirements	Description of hardware, software, and communications requirements associated with the initiative.
Variance at Completion	The difference between the total budget assigned to a contract, WBS element, organizational entity, or cost account and the estimate at completion; represents the amount of expected overrun or under run.

ACRONYMS

AB	Annual Benefit
AC	Annual Cost
ACWP	Actual Cost of Work Performed
AS	Agency Sponsor
BAC	Budget at Completion
BCR	Benefit-Cost Ratio
BCWP	Budgeted Cost for Work Performed
BCWS	Budgeted Cost of Work Scheduled
BPR	Business Process Reengineering
CBA	Cost-Benefit Analysis
CBB	Contract Budget Base
CCA	Clinger-Cohen Act
CFO	Chief Financial Officer
CIO	Chief Information Officer
COTS	Commercial-off-the-shelf
CPI	Cost Performance Index
CPIC	Capital Planning and Investment Control
CSBR	Cost, Schedule, Benefit, and Risk
CV	Cost Variance
DB	Discount Benefit
DC	Discount Cost
DF	Discount Factor
EAC	Estimate at Completion
EBT	Electronic Benefit Transfer
E-Board	Executive Information Technology Investment Review Board
ETC	Estimate to Complete
FAA	Federal Aviation Administration
FASA	Federal Acquisition Streamlining Act
FM	Functional Manager
FTEs	Full-Time Equivalents
FY	Fiscal Year
GAO	General Accounting Office
GISRA	Government Information Security Act of 2000
GPEA	Government Paperwork Elimination Act of 1998
GPRA	Government Performance and Results Act
GSA	General Services Administration
GWACS	Government-wide Agency Contracts
IDS	Intrusion Detection System
IOC	Initial Operational Capability
IPT	Integrated Project Team
IRM	Information Resource Management
ISSPM	Information System Security Program Manager

ISTA	Information System Technology Architecture
IT	Information Technology
IV&V	Independent Verification and Validation
MB	Megabyte
MNS	Mission Needs Statement
MR	Management Reserve
NIST	National Institute of Standards and Technology
NPV	Net Present Value
O&M	Operations and Maintenance
OBPA	Office of Budget and Program Analysis
OCFO	Office of the Chief Financial Officer
OCIO	Office of the Chief Information Officer
OMB	Office of Management and Budget
OPPM	Office of Procurement and Property Management
PIR	Post-Implementation Review
PMB	Performance Measurement Baseline
PRA	Paperwork Reduction Act
RFP	Request for Proposals
ROI	Return on Investment
SV	Schedule Variance
SME	Subject Matter Expert
USDA	United States Department of Agriculture
VAC	Variance at Completion
VPN	Virtual Private Network
WBS	Work Breakdown Structure



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